

to other ideas that we had; and it came out that we adopted a new sign, a red sign with the words "wrong way" on it, rather than the symbol because the symbol did not do the job we thought the other one did, so we have been working in this area and will continue to work in this area.

Mr. CLAUSSEN. Well, in conclusion—I know we are getting ready to wrap up, Mr. Chairman—I certainly want to thank these gentlemen for what I think has been some very helpful testimony. We will be looking forward to it for the balance of the week and to the additional evidence you will be able to give us.

Mr. HOWARD. Thank you, Mr. Clausen.

Mr. CONSTANDY. I think it would be appropriate, Mr. Chairman, having guardrail in mind, and what you might consider a representative cross section of the Interstate System in the United States at this point in time, that the members of the panel express their opinions generally and overall on what they have seen.

I would like to begin with you, Mr. Wilson, and ask if you care to make some comments?

Mr. WILSON. Well, I would.

It appears as if there is quite a bit of knowledge available to highway departments, and it appears to me it is not being used in a proper manner. I think even in our own State, we have certain problems in connection with implementing new developments.

I do not want to make all the comments but I would like to say one thing, that I do not subscribe wholeheartedly to the fact that a guardrail ought to be buried every time there is an end. I think in a good many cases, particularly in rough country where we build a lot of highways, the end of the rail can be buried at the side of the slope, does not have to be buried in flat ground, and I think that a modest flare can be used to advantage, and I would have to disagree with some of the other experts on the panel here who feel perhaps it should be buried every time.

Mr. CONSTANDY. Overall, Mr. Wilson, would you say you are satisfied with the installation of guardrail generally as is shown in the United States?

Mr. WILSON. There are considerable inconsistencies to be sure. Obviously there is a lack of communication in getting the word to the people who are actually doing the work. The variation in heights, the lack of washers, all of these things point up that while we know this information, it is just not getting to the right people.

Mr. CONSTANDY. Mr. Skeels.

Mr. SKEELS. I have about the same comments. First off, I would like to make the point that we believe guardrail should be used only as a last resort, when the need for it cannot be eliminated. If, even by spending more money, you can make a guardrail unnecessary, you are better off to thereby solve the problem permanently.

As to actual construction of guardrail, as we have seen, there are many faults; there are many times when apparently it is not intelligently applied. Knowledge is available to cover most of the situations. I am sure that we can all conjure up situations that we do not know how to solve, but most of them I think we can solve with the available knowledge that has been published in the Highway Research Board papers and bulletins and elsewhere. The primary need is to get this